CEREBRAL SYPHILIS *

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The term "cerebral syphilis" is often used in speaking of or describing all phases and all stages of syphilitic involvement of the central nervous system. The use of this term as descriptive of a comparatively early syphilitic involvement of the nervous system is correct; its use when describing the later phases of the disease is quite incorrect and may lead to mistaken diagnoses. In a very broad sense the term is permissible, permissible from a nosological point of view, but from a diagnostic standpoint it is comparable to the diagnosis of a "fever" without any limitations or differentiations.

Anatomically, cerebral syphilis is divided into three forms: endarteric, meningitic, and gummatous, the terms implying the pathological changes that take place, and, as we are not concerned for the present with the finer points in anatomico-pathological diagnosis, we will not elaborate on this.

In the differentiation between mesoblastic syphilis (for the purposes of this paper called cerebral syphilis) and paresis and tabes dorsalis there are many features that present themselves.

True cerebral syphilis is in reality a mesoblastic involvement or process, and generally speaking, as compared to paresis and tabes, both parenchymatous processes, an early involvement. I have personally seen one case with symptoms referable to the central nervous system occurring within six weeks of the initial infection. In this case the scars of the syphilitic rupia were still unhealed. However, the majority of authors give three to five years as the average time that elapses from infection to central nervous system manifestations.

In years gone by and before the elaboration of exact serology we were inclined to be hazy and uncertain regarding the connection between syphilitic infection and the development of paresis and tabes, but with the introduction in 1905 of the Wassermann reaction the etiology of these diseases became clearer, even then there were some physicians who shied at accepting syphilis as the sole cause of these diseases. Many admitted a possible connection, but even these men accepted the proof with reservations and hedged their statements by classifying paresis and tabes as meta- or para-syphilitic disorders. It was not until 1913 that Nogouchi and Moore, by their demonstration of the treponema in the brain cortex of paretics gave us absolute proof that these two diseases must be considered as active syphilitic processes.

Perhaps from what I have already said and from what is to follow, it will be concluded that a syphilitic infection will eventually result in an involvement of the nervous system. Such is not the case, though syphilis of the nervous system is a relatively frequent disease, some observers stating that from 2 per cent to 10 per cent of all syphilitics develop syphilitic disease of the nervous system. In this connection, I may be pardoned for a slight digression from my main theme.

All those who have studied the problems of syphilitic involvement of the nervous system have noted more or less frequently in paresis and tabes, and to some extent in cases of cerebral syphilis, that the initial infection in many instances is often very mild, in many cases unrecognized, and a large percentage of these infections are not followed by frank secondary manifestations. This gives rise to the conjecture as to the possible existence of strains of the treponema having a special predelection for the tissues and structures of the central nervous system.

But to return to the point at issue.

In cerebral syphilis we are dealing with a condition that has developed within three to five years of the initial infection and that, in itself, is an important point in the differentiation between this condition and the parenchymatous syphilitic processes.

The physical signs are diverse and it often requires careful observation and correlation of the facts to arrive at the correct diagnosis. Unfortunately, there are no absolutely constant diagnostic signs or physical findings by which we can arrive at the correct diagnosis.

The symptoms and mode of onset, however, may be of assistance. The most prominent symptoms being the rather acute onset of headache and dizziness, cranial nerve involvements, generalized or Jacksonian convulsions, not necessarily with loss of consciousness and often followed by permanent focal symptoms in the nature of hemiplegias and paraplegias. These occurring in an individual with a syphilitic history dating back three to five years should at once arouse in us the suspicion of the disease entity. In these conditions we are at times confronted by a mental picture, confusing at first, but on more careful observation it can be shown to be different from the mental picture of the typical paretic, and it is in the non-recognition of this mental reaction that so many faulty diagnoses occur. This mental reaction has been described by Adolf Meyer as the acute organic reaction, and its salient features are: confusion, delirium, auditory and visual hallucinations, and a memory defect involving recent events, these occurring without any slumps in the makeup of the personality.

In the diagnosis of paresis and tabes we are greatly assisted by the reflex changes and the pupillary reactions—by pupillary reactions I refer to the Argyll-Robertson pupil—but experience teaches us that the presence of the Argyll-Robertson pupil in paresis is by no means as frequent as text-books would have us believe. Many authorities claim that it is present in from 50 per cent to 75 per cent of all paretics, but my personal experience is that these figures are a bit too high. In tabes the Argyll-Robertson pupil is present in from 75 per cent to 80 per cent of the cases, some very radical authors stating that a diagnosis of tabes is not justified without the Argyll-Robertson pupil. But when we look for pupillary signs, especially the fixed pupil, in cases of cerebral syphilis we will find that the large majority of cases do not exhibit this phenomenon, and here we have a differential point of great importance. However, close ob-

* Read before the Santa Barbara County Medical Society on November 27, 1922.

servation often shows pupillary reactions of considerable diagnostic value, these reactions being sluggishness, inequality, and irregularity and taken in combination with the other elements of the case will prove helpful.

The reflex changes, so valuable in the diagnosis of tabes, will prove of little value in the diagnosis of cerebral syphilis, for the reflexes may be normal, increased, diminished, or absent according to the location of the lesion.

Serology in the differentiation of cerebral syphilis from tabes and paresis is the third important diagnostic feature. Fully 90 per cent of all paretics show the Wassermann reaction positive in both blood and spinal fluid. The spinal fluid of tabes is positive in fully the same percentage of cases, but the blood only in about 75 per cent of cases. It is this point that Plaut called attention to as a differential point between paresis and tabes. In cerebral syphilis the blood and spinal fluid may or may not be positive; the more acute and fulminating the case, the more liable are we to have a positive serology. It is the old chronic case that has remained stationary for a long time that shows the negative reaction.

We cannot draw very many conclusions from the globulin content and cytology of the spinal fluid. The presence of globulin and an increased cell-count speak only for inflammatory reactions taking place, and practically all cases of tabes and paresis show a moderately increased globulin content and a cell-count not too pronounced, but the spinal fluid in cerebral syphilis, being a more acute process, may have greatly increased globulin and a very high cell-count.

Much could be said regarding the treatment of cerebral syphilis. In these days of salvarsan, physicians are quite liable to overlook the old reliable remedy mercury. Salvarsan or arsphenamine is of extreme value in the therapy of syphilis of the nervous system but its value is increased by the judicious use of mercury. Mercury by mouth, by innunction, by hypodermic, but get the mercury into the system along with the arsenicals. Potassium iodide has its place as an adjunct to mercurial and arsenical therapy, alone the iodide is of no value whatsoever as it only helps in the elimination of various toxins and products disorganized and broken up by mercury and arsenic.

The method of administering salvarsan or arsphenamine must be worked out to suit the individual case. Shall it be salvarsan alone or salvarsan plus spinal drainage? These questions must be considered when we have studied the needs and analyzed each case separately.

To summarize:

1. As compared to tabes and general paresis, cerebral syphilis is an early involvement of the central nervous system. In the former the time that elapses from infection to development of symptoms is rarely less than ten years, in the latter the time is from three to five years.

2. The onset of cerebral syphilis is often acute with headache, cranial nerve involvements, etc., and a mental reaction that is fairly characteristic.

3. The Argyll-Robertson pupil occurs in fifty per cent to seventy-five per cent of all cases of paresis and in seventy-five per cent to eighty per cent in tabes, its presence in cerebral syphilis is sufficiently rare to make it a differential point of importance.

4. Little value can be placed on the reflex changes.

5. Ninety per cent of paretics have a positive Wassermann reaction in the blood and spinal fluid. Ninety per cent of tabetics have a positive reaction in the spinal fluid, but only 75 per cent have a positive reaction in the blood. In cerebral syphilis the blood and spinal fluid may or may not be positive. The acute cases are the ones most liable to have the positive reactions.

6. A greatly increased globulin content and a high cell count point to cerebral syphilis.

7. Arsenical treatment with the assistance of mercury compounds is indicated.

Case of Ectopic Pregnancy at Term With Living Child—A diagnosis of pregnancy of about eight months with impending eclampsia having been made, an immediate cesarean operation was performed by B. J. O'Neill and W. W. Crawford, San Diego, Calif. (Journal A. M. A., March 31, 1923). The abdomen was opened by a right rectus incision, and a dark, bluish, smooth mass, resembling an ovarian cyst, was revealed. On palpation, fetal parts were felt, separated from the hands by a thin membrane, which ruptured almost at once, with a gush of water. The baby was lifted out in the usual way, the head offering considerable resistance. The cord was clamped, and the baby was revived by an assistant, with no more difficulty than is usual in a cesarean section. After removal of the child, there was a fair amount of hemorrhage, which was controlled by pressure with gauze. The uterus was somewhat enlarged. The left tube was about six inches (15 cm.) long, and the expanded fimbriated extremity was directly continuous with the cavity formed by the membranes. The placenta was thin and widespread, being planted on the posterior surface of the left broad ligament and on the sigmoid and the intervening pelvic wall, besides being adherent to both the large and the small intestine. The placenta thus formed the left and upper side of the sac. The left ovary was not identified. Actively bleeding vessels entered through adhesions from the large and small intestines, and some very large vessels entered the placenta from the broad ligament. The baby, a boy, weighing six pounds and three ounces (2800 gm.), had hair and well-developed nails, indicating birth at practically complete term. The skull was somewhat deformed from resting on the sacrum, and there was a moderate calcaneovalgus of the right foot, a marked talipes equinovarus of the left foot and a partial dislocation of the left hip, with indication of some bony pathologic process in the left knee. The post-operative course for both mother and child was uneventful.

National Board of Medical Examiners—The National Board of Medical Examiners will conduct examinations as follows:

Part I, June 25, 26, 27, 1923.

Part II, June 28, 29, 1923.

Part I, September 24, 25, 26, 1923.

Part II, September 27, 28, 1923.

All applications for these examinations must be made on or before May 15.

Further information may be obtained from the secretary, J. S. Rodman, 1310 Medical Arts Building, Philadelphia, Pa.